Surficial deposits Recent alluvium and landslides; alluvial fans; terrace gravels and glacial deposits. Includes some outcrops of bedrock beneath terrace gravels and in stream banks Bedded rocks Gray- to gray-green sandstone, conglomeratic sandstone, conglomerate and coal. Conglomerate pebbles of quartz and metasedimentary rocks UNCONFORMITY Graywacke, conglomerate and shale Shale, siltstone, and graywacke Conglomerate pebbles and boulders of mafic igneous rocks and gray quartzite. Plant fragments and pelecypods of Locally includes rocks of unit Ko. Contains ammonites of Early Cretaceous Cretaceous(?) age Red, green, and dark-gray argillite and chert Graywacke UNCONFORMITY Lisburne group Light- to medium-gray crinoidal limestone and dolomite in lower part. Dark-gray, dense, fine-grained limestone and dolomite with black chert in upper part. Thickness approximately 500 feet. Brachiopods of Early(?) Mississippian age in lower part. Gastropods of Late(?) Mississippian age in upper part Black shale and slate with interbedded ferruginous limestone at top, and approximately 100 to 300 feet of clean quartzite at base. Approximately 250 to 900 feet thick UNCONFORMITY Kanayut conglomerate Gray to gray-green massive quartz-chert sandstone and quartzite; conglomeratic quartzite and shale. Conglomeratic beds absent south of Hunt Fork, Yenituk Creek, and Till Creek. More than 2,500 feet thick near Loon Lake. Apparently absent at Falsoola Mountain Sandstone and shale Gray-green, pink- to brown-weathering, thin-bedded, partly calcareous sandstone and schistose sandstone; green, finegrained, massive, calcareous sandstone; siltstone and shale. Minor amounts of slate-pebble conglomerate. Approximately 3,500 feet thick. Gradational(?) with Kanayut conglomerate. Believed correlative with fossiliferous sandstones of late Devonian age on upper Killik River Phyllite Black phyllite, slate, and mica-schist; Black phyllite and slate gray slaty siltstone; gray to gray-green Skajit limestone schistose sandstone and sandstone. May Clay slate and phyllite and hard black phyllitic siltstone; include some rocks of unit KJ Black mica-schist, phyllite and quartz-mica-schist. Light-gray, very fine crystalline some black schist in southernmost outcrops. Interbedded D₁₆f, chloritic ferruginous mica-schist and quartzmassive dolomite and dolomite green fine-grained sandstone and brown schistose sandstone. mica-schist. Distinguished by its resistance. Approximately 4,500 feet thick at Ernie Creek. D₁₆q, quartzite-schist and quartz-mica-schist. breccia in 1 lower part; light- to dark-gray marble and limestone-> Dpa, thermally altered(?) phyllites. Black, purple, and D₁₆c, mica-schist, quartzitic schist, chloritic green phyllite and small mafic sills. pebble conglomerate in upper part. quartzite, and interbedded marble Minor interbedded mica-schist. Dpc, conglomerate. Foliated quartz-chert-slate-pebbl Many thin greenstone dikes and conglomerate; gray quartzite and grit; foliated light-gray sills. About 1,500 feet thick. siltstone. Tentatively correlated with unit Dpt, dark-gray limestone and white marble beds in lower part of unit. Corals of Middle(?) Devonian age. Dsg, orange-weathering dolomite with Dca, conglomerate and quartzite pyritized and locally replaced by feldspar. Weathers bright red bands of green chlorite schist Schist and marble Gray marble, prown-weathering calcareous mica-schist and black quartz-mica-schist UNCONFORMITY(?) NORTH FORK KOYUKUK RIVER - HAMMOND RIVER ALLEN RIVER - NORTH FORK KOYUKUK RIVER UPPER JOHN RIVER Calcareous siltstone Calcareous siltstone Sandy schist Gray limestone, gray silty limestone, gray calcareous siltstone and Gray to buff calcareous D, brown, platy sandy schist; gray noncalcareous siltstone. Weathers to smooth pink plates. Minor •phyllite and slate. May be siltstone, fine-grained interbedded gray to black phyllite, black siltstone and chloritecalcareous mica-schist, equivalent to unit Dss. mica-schist. silty limestone, and D₂, gray-green, partly calcareous D21, gray, pink to yellowish-gray-weathering platy limestone marble. Weathers pink sandy schist; gray calcareous to buff. Minor black phyllite, chert-pebble conglomphyllite and chloritic erate and limestone. Gradational(?) with unit D₁. siltstoneBrachiopods of Middle Devonian Slate, phyllite, and siltstone Phyllite and siltstone D₁₀, gray-green to brown slate, siltstone, silty phyllite and schist.

Weathers gray to pink. Dark-gray calcareous phyllite and dark-gray limestone. Corals and brachiopods of Middle(?) Devonian age. D₁₁, green to gray, partly calcareous chloritic phyllite and chloritic schistose siltstone. Interbedded with black silicified siltstone; minor marble and dolomite. D₁₁L, white marble Phyllite Slate and phyllite Phyllite and siltstone Gray, green and purple phyllite; Gray to black phyllite; red Gray, yellow- to browngray and green siltstone and and green argillite; black weathering slate; purple and green phyllite; purple and siltstone; calcareous grit; green chlorite-quartzgreen chert-shale-pebble mica-schist; limestone and phyllite and limestone conglomerate. Minor black black siltstone in lower Phyllite and siltstone siltstone, limestone and dolomite. May be equivalent D₆, dark-gray limestone Gray to black phyllite and slate; chloritic schistose siltstone; grayto unit Dp containing corals of Middle(?) green graywacke grit; black, gray and white silicified siltstone Devonian age D14t/ Phyllite, dolomite, and limestone Schist, dolomite, and limestone Calcareous schist Limestone and siltstone Pink, green, and purple phyllite, Brown-weathering calcareous Interbedded gray to green, Limestone, marble, dolomite; foliated conglomerate, darkmica-schist with rare partly calcareous phyllite black siltstone and gray gray phyllite, black limestone pebbles; calcareous and chloritic mica-schist, phyllite. Minor green silicified siltstone and chlorite-mica-schist and massive dolomite and conglomerate and green orange-weathering dolomite interbedded marble. marble; black mica-schist chloritic schist. As and limestone. May include with limestone and D₇l, marble. May be Skajit mapped may include some rocks equivalent to unit dolomite pebbles; brownlimestone Skajit limestone weathering partly D₁₄t, marble calcareous silty schist with marble and dolomite pebbles. D₁₃L, orange-weathering, very fine grained, massive dolomite; dolomite and pinkweathering limestone. May include some Skajit limestone Undifferentiated mafic igneous rocks Sills and flows Undifferentiated mafic igneous rock: and schist 100 200 300 400 500 600 700 Zinc, in parts per million Many small sills of mafic igneous rock in mica-schist Copper, in parts per million Analyses by H. H. Mehorest and John McHugh, U. S. Geological Survey, 1959-60 SYMBOLS Histogram showing concentration of copper and zinc in 49 samples of stream bed sediments Fossil locality Dotted where concealed Occurrence of metallic minerals Metals may occur singly or in combination More than one mineral may occur at one locality Indefinite contact Includes gradational contacts, inferred contacts and indefinite boundaries of surficial deposits. Dashed where approximately located, dotted where concealed; questioned where existence is doubtful. Galena in vein quartz U, upthrown side; D, downthrown side Antimony Stibnite Thrust fault Saw-teeth on upper plate. Dashed where approximately Titanium Anticline Showing trace and plunge of axial plane. Dashed where approximately located Placer gold Recently worked deposits Stream bed sediment analyses Showing trace of axial plane. Dashed where approximately located Showing concentration in parts per million.

Location of samples with less than 60 ppm not Showing trace of axial plane, direction of dip of limbs and plunge of axis. Dashed where approxi-Zinc mately located Showing concentration in parts per million. Index map of Alaska showing location of map area Location of samples with less than 500 ppm not shown Overturned syncline Showing trace of axial plane, direction of dip of limbs. Dashed where approximately located PROGRESS MAP OF THE GEOLOGY OF THE WISEMAN QUADRANGLE, ALASKA By W. P. Brosge and H. N. Reiser Strike and dip of beds Strike of vertical beds

Strike and direction of dip of beds by distant

observation or photo interpretation

EXPLANATION

Geology by W. W. Patton, Jr., M. D. Mangus, W. P. Brosgé 1951

J. T. Dutro, Jr., M. D. Mangus 1952

W. W. Patton, Jr., I. L. Tailleur 1953

W. P. Brosgé, H. M. Reiser, C. L. Whittington, W. L. Mystrom 1958

W. P. Brosgé, H. M. Reiser, J. O. Berkland, D. F. Kellum 1959

been edited or reviewed for conformity

with U. S. Geological Survey standards
and nomenclature.

Quaternary geology and geology of Gray Mountain area and Ernie Lake area

largely from interpretation of serial photographs

SHEET 2 OF 2